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discovery, I was privileged to conduct a two-month research visit at Professor Joubert's Drug Design Laboratory at University of the Western Cape (UWC). The primary aim was to identic compounds capable of activating the SIRT1 enzyme using both experimental and computation approaches. SIRT1 is a critical enzyme involved in cellular regulation, aging, and metabolism Enhancing molecular docking methodologies aims to increase the efficiency and accuracy of identifying promising SIRT1 activating compounds for therapeutic applications. This report provides an overview of the objectives, methodologies, findings, and future implications of the research endeavor. The visit also played a key role in strengthening the collaboration between Prof. Joubert's and Prof. Zou's laboratories.

- 1. To establish and validate SIRT1 Assay in the laboratory.
- 2. To enhance the molecular docking capabilities for SIRT1 within the Drug Design Laboratory.

Methodology

During the two-month research period, under Prof. Joubert's supervision, I conducted extensive structure-based virtual screening using two distinct molecular

Participating in Prof. Joubert's group meeting

Table Mountain National Park

V&A Water Front

Visit to Robben Island

Cape Point

Sunset at Camp's Bay beach